

POULTRY HOUSES

OCCUPANCY DESCRIPTION: These buildings are designed for the care and housing of caged poultry, e.g., commercial laying. The costs are for complete houses. The quality determination should be influenced by wall systems; closed-type, open screening, curtains, etc.; floor systems, e.g., slab, wood or dirt; the amount of interior finish, lighting and plumbing systems.

INCLUDED IN COSTS: Architects' fees and contractors' overhead and profit.

NOT INCLUDED IN COSTS: Racks, cages, feeders, egg gathering or other special equipment or heat.

ONE-STORY – CAGE OPERATION – ENCLOSED HOUSES*

CLASS	TYPE	COST/ SQ. FT.	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING & PLUMBING
C	Good	\$25.20	Brick or block, heavy roof, well insulated, good fenestration	Paint and sealant, good plank or concrete slab with drains	Wiring in conduit, high-level lighting, water service
	Average	18.30	Concrete block, insulated roof, good fenestration and ventilation	Painted, concrete or wood floors, some partitions	Good lighting and outlets, water service
	Low cost	13.30	Concrete block, adequate fenestration, clear-span roof, ventilated	Unfinished, low-cost concrete or wood floors	Adequate electrical service, water service
D	Good	21.60	Brick veneer or best stucco, good fenestration, insulation	Finished interior walls, good plank or concrete floor with drains	Wiring in conduit, high-level lighting, water service
	Average	15.15	Good siding and windows, insulation, good frame, vents and roof	Plywood ceilings, concrete floors, some partitions	Good lighting and outlets, water service
	Low cost	10.65	Wood siding, adequate fenestration, insulated, ventilated	Unfinished, cheap slab or wood	Adequate services
DPOLE	Good	19.60	Pole frame, metal siding, fully insulated-sheathed, good openings	Finished interior walls, good plank or concrete floor with drains	Wiring in conduit, high-level lighting, water service
	Average	13.60	Pole frame, metal sidings, insulated, adequate fenestration	Concrete floors, some partitions	Good lighting and water
	Low cost	9.45	Metal siding on poles, some wainscot and insulation, ventilated	Unfinished, low-cost concrete or wood floors	Adequate electrical service, water service
	Cheap	7.75	Metal on poles, sidewall vents	Unfinished, cheap floor	Minimum service
S	Good	20.45	Best steel panels, insulated interior, sheathing, good fenestration	Finished interior walls, good plank or concrete floor with drains	Wiring in conduit, high-level lighting, water service
	Average	14.35	Steel siding, insulated, sheathing, adequate fenestration	Concrete floors, some partitions	Good lighting and water
	Low cost	10.05	Steel siding and frame, some wainscot and insulation, ventilated	Unfinished, low-cost concrete or wood floors	Adequate electrical service, water service
	Cheap	8.40	Light frame, sidewall vents	Unfinished, cheap floor	Minimum service

ONE-STORY – CAGE OPERATION – SCREENED HOUSES*

DPOLE	Average	\$ 9.70	Heavy pole frame, curtain sidewalls	Concrete floors, some partitions	Good lighting and water
	Fair	8.90	Metal, insulated, sidewall open screen, full curtains	Unfinished, good floor, insulated ceiling	Adequate lighting and outlets, water service
	Low cost	8.20	Metal, insulated, sidewall open screen, no curtains	Unfinished, pole frame, concrete or wood floor, insulated ceiling	Adequate electrical service, water service
	Cheap	5.40	Metal or lath partial walls or screen on light pole frame	Open ventilation, unfinished, cheap floor, no insulation	Minimum lighting and water
S	Average	10.30	Heavy steel frame, curtain sides	Concrete floors, some partitions	Good lighting and water
	Fair	9.55	Metal, insulated, sidewall open screen, full curtains	Unfinished, good floor, insulated ceiling	Adequate lighting and outlets, water service
	Low cost	8.85	Metal, insulated, sidewall open screen, no curtains	Unfinished, pole frame, concrete or wood floor, insulated ceiling	Adequate electrical service, water service
	Cheap	5.60	Metal partial walls or screen on light steel frame	Open ventilation, unfinished, cheap floor, no insulation	Minimum lighting and water

*Costs are for one-story poultry houses. For two- or three-story buildings, use 75% of the base square foot cost for each additional story. For high-rise houses, where the house is elevated for cleaning purposes, add 20%. For stud-backed walls on Class D_{POLE} structures, add 5%.

EXAMPLE: Low-cost Class D_{POLE}, two-story curtain-screened cage house, 40' x 200' x 16' height.

Base Cost	= \$8.20	1st Floor Cost Factor:	.905 x \$8.20	= \$ 7.42
Height Factor	= .963	2nd Floor Cost Factor:	.75 x \$7.42	= \$ 5.57
Size/Shape Factor	= .94	Total Cage House Cost:	8,000 x \$7.42	= \$ 59,360
Combined Factors	= .905		8,000 x \$5.57	= \$ 44,560
			16,000 X \$6.50	= \$ 103,920

POULTRY CAGE HOUSES

REFINEMENTS: On this page are the means of making major adjustments to the base costs on the previous page. Follow Steps 1 through 5 to attain final costs, adjusted for lump sums, heating and cooling, story height, floor area/perimeter ratio and locality.

1	ADJUSTMENTS POULTRY EQUIPMENT SYSTEMS*	A-FRAME COST PER BIRD	BATTERY COST PER BIRD
	(Costs Calculated at .48 Square Feet per Bird)		
	A-frame layer cages with chain feeding system, 5-tier	\$4.75	-----
	Battery layer cages with feeding system (cages with manure removal belts under every tier and direct-drive chain feeding systems), 8-tier	-----	\$9.27
	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system) .....	.21	.17
	Nipple watering system .....	.52	.38
	Egg collection system (transports eggs from layer house to egg packing building) .....	.15	.08
	Manure removal system (belt conveyor system located in the rear of the building transports the manure to a secondary conveyor, which transports the manure outside the building)	-----	.08
	House fan system (fans, shutters, and other miscellaneous equipment) .....	.46	.38
	Evaporative cooling pad system (does not include framing materials or plumbing from water source to the cooling system) .....	.16	.14
	Sidewall curtain and air inlet system .....	.22	.17
	*Equipment costs can vary a plus or minus 25%, and density will vary significantly by type and size of operation, as well as by type of cage and building system, with a range from .37 to .87 square feet per bird.		

2	HEATING AND COOLING	
	These costs are averages of total installed cost of the entire heating or cooling installation including its prorated share of contractors' overhead and profit and architects' fees.	
	Electric cable or baseboard	\$2.90
	Electric wall heaters (inc. FWA)	1.25
	Forced air, ducted	3.20
	heaters or furnace, vented .....	.95
	Hot water, baseboard/convactor	5.85
	radiant floor or ceiling	6.05
	Space heaters, with fan	1.60
	radiant	1.80
	Steam	5.05
	Wall or floor furnace	1.45
	Package heating and cooling	6.30
	Ventilation, blower and ducts .....	.95

3	HEIGHT REFINEMENTS STORY HEIGHT MULTIPLIERS																								
	Multiply base cost by following multiplier for any variation in average story height.																								
	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 50%;">Average Wall Height</th> <th style="text-align: left; width: 50%;">Square Foot Multiplier</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">7</td><td style="text-align: right;">.943</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: right;">.963</td></tr> <tr><td style="text-align: center;">9</td><td style="text-align: right;">.981</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: right;">1.000</td></tr> <tr><td style="text-align: center;">11</td><td style="text-align: right;">1.019</td></tr> <tr><td style="text-align: center;">12</td><td style="text-align: right;">1.038</td></tr> <tr><td style="text-align: center;">13</td><td style="text-align: right;">1.058</td></tr> <tr><td style="text-align: center;">14</td><td style="text-align: right;">1.077</td></tr> <tr><td style="text-align: center;">16</td><td style="text-align: right;">1.115</td></tr> <tr><td style="text-align: center;">18</td><td style="text-align: right;">1.154</td></tr> <tr><td style="text-align: center;">20</td><td style="text-align: right;">1.192</td></tr> </tbody> </table>	Average Wall Height	Square Foot Multiplier	7	.943	8	.963	9	.981	10	1.000	11	1.019	12	1.038	13	1.058	14	1.077	16	1.115	18	1.154	20	1.192
Average Wall Height	Square Foot Multiplier																								
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4	Average Floor Area, Sq. Ft./Story	AVERAGE PERIMETER														Average Floor Area, Sq. Ft./Story
		80	100	150	200	250	300	350	400	500	600	700	800	1000	1200	
	500	1.19	1.29	1.54	1.79	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	500
	800	1.04	1.10	1.26	1.42	1.57	1.73	1.88	-----	-----	-----	-----	-----	-----	-----	800
	1,000	-----	1.04	1.17	1.29	1.42	1.54	1.66	1.79	-----	-----	-----	-----	-----	-----	1,000
	2,000	-----	-----	.98	1.02	1.10	1.17	1.23	1.29	1.42	1.54	1.66	1.79	-----	-----	2,000
	4,000	-----	-----	-----	-----	.95	.98	1.01	1.04	1.10	1.17	1.23	1.29	1.42	1.54	4,000
	6,000	-----	-----	-----	-----	-----	.92	.94	.96	1.00	1.04	1.08	1.12	1.21	1.29	6,000
	8,000	-----	-----	-----	-----	-----	-----	.90	.92	.95	.98	1.01	1.04	1.10	1.17	8,000
	10,000	-----	-----	-----	-----	-----	-----	-----	.89	.92	.94	.97	.99	1.04	1.09	10,000
	12,000	-----	-----	-----	-----	-----	-----	-----	-----	.88	.90	.92	.94	.96	1.00	12,000
	14,000	-----	-----	-----	-----	-----	-----	-----	-----	.86	.88	.90	.92	.93	.97	14,000
	16,000	-----	-----	-----	-----	-----	-----	-----	-----	.85	.87	.89	.90	.92	.95	16,000
	20,000	-----	-----	-----	-----	-----	-----	-----	-----	.84	.85	.87	.88	.89	.92	20,000

5 USE COUNTY MULTIPLIERS IN MULTIPLIER SECTION.

POULTRY HOUSES

OCCUPANCY DESCRIPTION: These buildings are designed for the care and housing of poultry at ground level, with predominantly dirt floors. The costs are for complete houses. The quality determination should be influenced by roof systems; the amount and character of screening; floor systems, e.g., slab, wood or dirt; the amount of interior finish, lighting and plumbing systems.

INCLUDED IN COSTS: Architects' fees and contractors' overhead and profit.

NOT INCLUDED IN COSTS: Racks, cages, incubators, other special equipment or heat.

FLOOR OPERATION – BREEDER HOUSES

CLASS	TYPE	COST/ SQ. FT.	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING & PLUMBING
C	Good	\$15.55	Brick or block, good ventilation and fenestration	Insulated ceiling, some slab and division of space	Adequate lighting and water service
	Average	12.05	Minimum block, shutters or vents, light roof structure, insulation	Unfinished, partial floor, some partitions, natural ventilation only	Minimum wiring and lighting, water service
D	Good	12.75	Wood siding or stucco, good ventilation and fenestration	Insulated ceiling, plywood interior, some slab floor and subdivision	Adequate lighting and water service
	Average	9.70	Light wood frame, wood siding, shutters or vents, insulated building	Unfinished, partial floor, some partitions, natural ventilation only	Minimum wiring and lighting, water service
DPOLE	Good	10.10	Pole frame, metal siding, fully insulated, ventilated	Insulated ceiling, plywood interior, some slab floor and subdivision	Adequate lighting and water service
	Average	8.60	Metal siding on pole frame, shutters or vents, insulation	Unfinished, partial floor, some partitions, natural ventilation only	Minimum wiring and lighting, water service
	Fair	7.95	Metal, insulated, sidewall top open screen, side curtains	Unfinished, partial floor, few partitions, insulated ceiling	Minimum wiring and lighting, water service
	Low cost	7.35	Metal, insulated, sidewall top open screen, no curtains	Unfinished, pole frame, partial floor, few partitions, insulated ceiling	Minimum services
	Cheap	4.90	Metal or plywood partial walls or screen on light pole frame	Open ventilation, unfinished, partial floor, no insulation, few partitions	Minimum lighting and hose bib
S	Good	10.65	Steel panels and frame, fully insulated, ventilated	Insulated ceiling, plywood interior, some slab and division of space	Adequate lighting and water service
	Average	9.25	Metal siding on steel frame, shutters or vents, insulation	Unfinished, partial floor, some partitions, natural ventilation only	Minimum wiring and lighting, water service
	Fair	8.60	Metal, insulated, sidewall top open screen, side curtains	Unfinished, partial floor, few partitions, insulated ceiling	Minimum wiring and lighting, water service
	Low cost	8.00	Metal, insulated, sidewall top open screen, no curtains	Unfinished, partial floor, few partitions, insulated ceiling	Minimum services
	Cheap	5.10	Metal partial walls or screen on light steel frame	Open ventilation, unfinished, partial floor, no insulation, few partitions	Minimum lighting and hose bib

FLOOR OPERATION – BROILER HOUSES

DPOLE	Good	\$9.30	Pole frame, metal siding, fully insulated, ventilated	Insulated ceiling, interior sheathing, dirt floor, subdivided	Adequate lighting and water service
	Average	7.80	Pole frame, metal siding insulated, shutters or vents	Insulated ceiling, plywood interior, dirt floor, some subdivision	Adequate lighting and water service
	Fair	7.10	Metal, insulated, sidewall top open screen, curtain sidewalls	Unfinished, dirt floor, insulated ceiling	Minimum wiring and lighting, water service
	Low cost	6.50	Metal, insulated, sidewall top open screen, no curtains	Unfinished, pole frame, dirt floor, insulated ceiling	Minimum services
	Cheap	4.10	Metal or plywood partial walls or screen on light pole frame	Open ventilation, unfinished, dirt floor, no insulation	Minimum lighting and hose bib
S	Good	9.85	Steel panels and frame, fully insulated, ventilated	Insulated ceiling, interior sheathing, dirt floor, subdivided	Adequate lighting and water service
	Average	8.40	Steel siding and frame, insulated, shutters or vents	Insulated ceiling, plywood interior, dirt, some division of space	Adequate lighting and water service
	Fair	7.75	Metal, insulated, sidewall top open screen, curtain sidewalls	Unfinished, dirt floor, insulated ceiling	Minimum wiring and lighting, water service
	Low cost	7.20	Metal, insulated, sidewall top open screen, no curtains	Unfinished, steel frame, dirt floor, insulated ceiling	Minimum services
	Cheap	4.30	Metal partial walls or screen on light steel frame	Open ventilation, unfinished, dirt floor, no insulation	Minimum lighting and hose bib

For stud-backed walls on Class D_{POLE} structures, add 5%.

TURKEY BARNS

OCCUPANCY DESCRIPTION: These buildings are designed for the care and housing of turkeys at ground level, with predominantly dirt floors. The costs are for complete houses. The quality determination should be influenced by roof systems; the amount and character of screening; floor systems, e.g. slab, wood or dirt; the amount of interior finish, lighting and plumbing systems.

INCLUDED IN COSTS: Architects' fees and contractors' overhead and profit.

NOT INCLUDED IN COSTS: Racks, cages, incubators, other special equipment or heat.

CLASS	TYPE	COST/ SQ. FT.	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING & PLUMBING
D	Average	\$9.45	Siding, insulated, sidewall top open screen, curtains and shutters	Unfinished, partial floor, few partitions, insulated ceiling	Adequate wiring and lighting, water service
	Fair	8.65	Siding, insulated, sidewall open screen, side curtains	Unfinished, dirt floor, some concrete, insulated ceiling	Adequate services
	Low cost	7.90	Plywood partial walls, side screen on wood studs, no curtains	Open ventilation, unfinished, dirt floor, no insulation	Minimum lighting and hose bib
DPOLE	Average	8.30	Metal, insulated, sidewall top open screen, curtains and shutters	Unfinished, partial floor, few partitions, insulated ceiling	Adequate wiring and lighting, water service
	Fair	7.55	Metal, insulated, sidewall open screen, side curtains	Unfinished, pole frame, dirt floor, some concrete, insulated ceiling	Adequate services
	Low cost	6.85	Metal partial walls, side screen on light pole frame, no curtains	Open ventilation, unfinished, dirt floor, no insulation	Minimum lighting and hose bib
DHOOP ARCH	Average	5.05	Wood post, knee wall, pipe hoop frame, fabric cover, end curtains	Unfinished, dirt floor, some concrete	Minimum services
	Low cost	4.00	Wood post, light pipe hoop, fabric cover	Open ventilation, unfinished, dirt floor, wire fence pens	Minimum lighting and hose bib
S	Average	8.95	Metal, insulated, sidewall top open screen, curtains and shutters	Unfinished, partial floor, few partitions, insulated ceiling	Adequate wiring and lighting, water service
	Fair	8.20	Metal, insulated, sidewall open screen, side curtains	Unfinished, steel frame, dirt floor, some concrete, insulated ceiling	Adequate services
	Low cost	7.55	Metal partial walls, side screen on light steel frame, no curtains	Open ventilation, unfinished, dirt floor, no insulation	Minimum lighting and hose bib

For stud-backed walls on Class **D_{POLE}** structures, add 5%.

FEED TANKS: Costs are averages of typical farm hoppers with roof, manhole and ladder, including necessary steel structural supports and concrete footings. Height is overall from ground level to top of tank. Capacity in tons is figured at 50 pounds per bushel. Costs do not include delivery auger.

DIAMETER (feet)	HEIGHT (feet)	CAPACITY (bushels)	CAPACITY (tons)	COST
6'	10	120	3.0	\$1,200
6'	16	240	6.0	1,650
6'	21	360	9.0	1,900
6'	25	480	12.0	2,125
6'	28	600	15.0	2,350
9'	14	300	7.8	2,425
9'	17	450	11.3	2,885
9'	20	590	14.8	3,140
9'	25	855	21.8	3,645
9'	28	1,000	25.0	3,825

DIAMETER (feet)	HEIGHT (feet)	CAPACITY (bushels)	CAPACITY (tons)	COST
9'	31	1,130	28.5	\$ 4,000
12'	20	870	21.8	5,430
12'	25	1,345	33.6	6,170
12'	31	1,825	45.6	7,040
12'	36	2,300	57.5	7,600
12'	42	2,780	69.5	8,300
15'	36	4,150	103.8	11,000
15'	42	4,900	122.5	12,700
18'	36	5,500	137.5	15,250

TURKEY BARNS

REFINEMENTS: On this page are the means of making major adjustments to the base costs on the previous page. Follow Steps 1 through 5 to attain final costs, adjusted for lump sums, heating and cooling, story height, floor area/perimeter ratio and locality.

1	ADJUSTMENTS TURKEY FINISHING QUIPMENT SYSTEMS	COST PER SQUARE FOOT	COST PER BIRD
	(Costs Calculated at 3 Square Feet per Bird)		
	Pan feeder systems with direct drives	\$.44	\$1.33
	Auger feeder bin and fill system (bulk feed bin which delivers feed to the feeders through an auger fill system) .....	.25	.74
	Nipple watering system .....	.47	1.41
	Heating system (jet brooders with wall heaters operating on propane gas) .....	.28	.84
	House fan system (fans, shutters and other miscellaneous equipment) .....	.63	1.89
	Evaporative cooling pad system (does not include framing materials or plumbing equipment from water source to cooling system) .....	.40	1.19
	Sidewall curtain and air inlet system .....	.58	1.73

2	HEATING AND COOLING	
	These costs are averages of total installed cost of the entire heating or cooling installation including its prorated share of contractors' overhead and profit and architects' fees.	
	Electric cable or baseboard	\$2.90
	Electric wall heaters (inc. FWA)	1.25
	Forced air, ducted	3.20
	heaters or furnace, vented .....	.95
	Hot water, baseboard/convactor	5.85
	radiant floor or ceiling	6.05
	Space heaters, with fan	1.60
	radiant	1.80
	Steam	5.05
	Wall or floor furnace	1.45
	Package heating and cooling	6.30
	Ventilation, fans only .....	.65

3	HEIGHT REFINEMENTS	
	STORY HEIGHT MULTIPLIERS	
	Multiply base cost by following multiplier for any variation in average story height.	
	Average Wall Height	Square Foot Multiplier
	7	.943
	8	.963
	9	.981
	10	1.000
	11	1.019
	12	1.038
	13	1.058
	14	1.077
	16	1.115
	18	1.154
	20	1.192

4	Average Floor Area, Sq. Ft./Story	AVERAGE PERIMETER														Average Floor Area, Sq. Ft./Story
		80	100	150	200	250	300	350	400	500	600	700	800	1000	1200	
	500	1.19	1.29	1.54	1.79	----	----	----	----	----	----	----	----	----	----	500
	800	1.04	1.10	1.26	1.42	1.57	1.73	1.88	----	----	----	----	----	----	----	800
	1,000	----	1.04	1.17	1.29	1.42	1.54	1.66	1.79	----	----	----	----	----	----	1,000
	2,000	----	----	.98	1.02	1.10	1.17	1.23	1.29	1.42	1.54	1.66	1.79	----	----	2,000
	4,000	----	----	----	----	.95	.98	1.01	1.04	1.10	1.17	1.23	1.29	1.42	1.54	4,000
	6,000	----	----	----	----	----	.92	.94	.96	1.00	1.04	1.08	1.12	1.21	1.29	6,000
	8,000	----	----	----	----	----	----	.90	.92	.95	.98	1.01	1.04	1.10	1.17	8,000
	10,000	----	----	----	----	----	----	----	.89	.92	.94	.97	.99	1.04	1.09	10,000
	12,000	----	----	----	----	----	----	----	.88	.90	.92	.94	.96	1.00	1.04	12,000
	14,000	----	----	----	----	----	----	----	.86	.88	.90	.92	.93	.97	1.01	14,000
	16,000	----	----	----	----	----	----	----	.85	.87	.89	.90	.92	.95	.98	16,000
	20,000	----	----	----	----	----	----	----	.84	.85	.87	.88	.89	.92	.94	20,000

5 USE COUNTY MULTIPLIERS IN MULTIPLIER SECTION.